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P. SINDERMANN

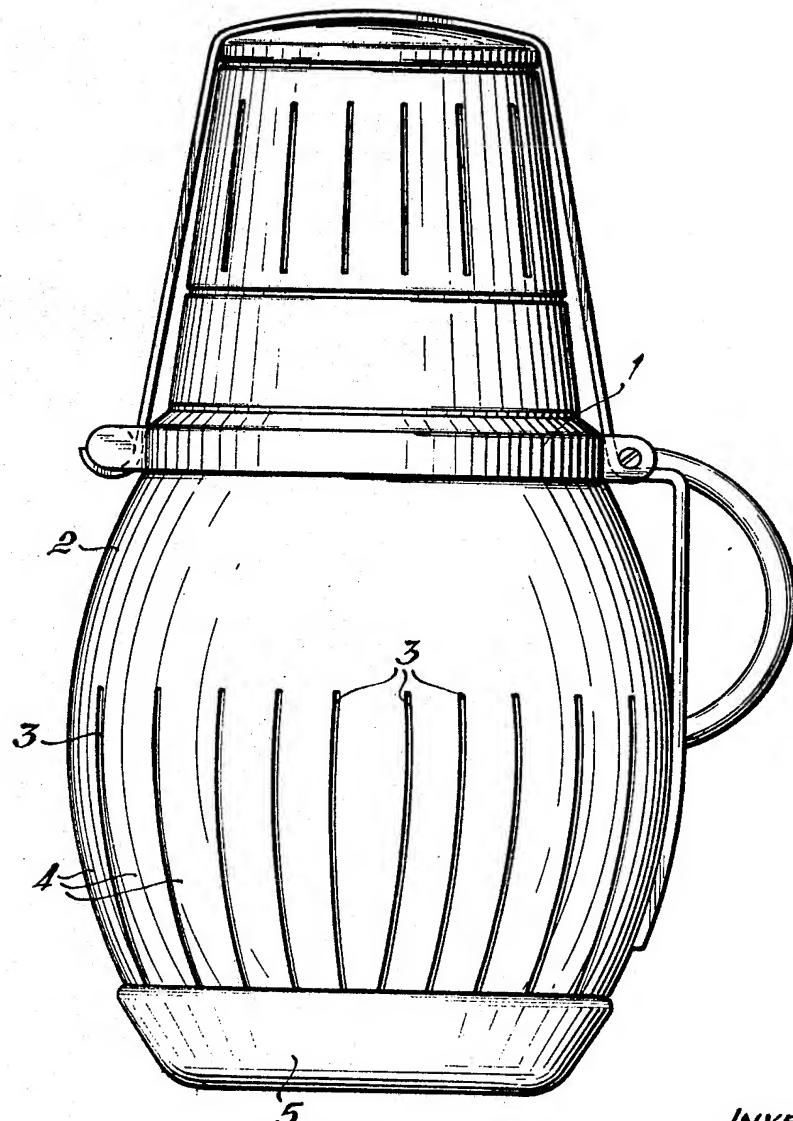
3,448,688

HAND GRENADE WITH INTERCHANGEABLE FRAGMENTATION CARRIER BODY

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FIG. 1



INVENTOR

PAUL SINDERMANN

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P. SINDERMANN

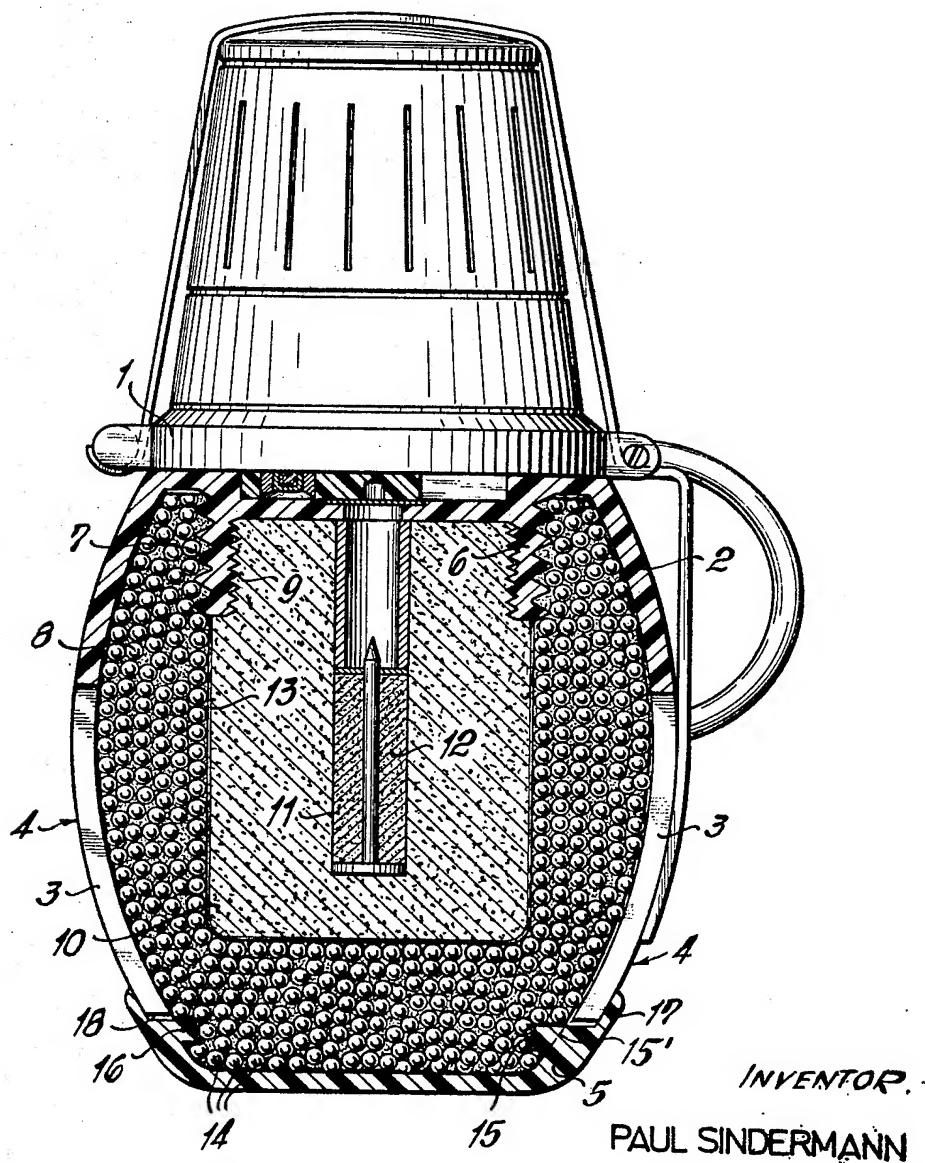
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FIG. 2



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**HAND GRENADE WITH INTERCHANGEABLE
FRAGMENTATION CARRIER BODY**Paul Sindermann, Nuremberg, Germany, assignor to
Diehl, Nuremberg, Germany

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4 Claims 10

ABSTRACT OF THE DISCLOSURE

A hand grenade for defense and attack, which includes a hand grenade body equipped with a fuse and having a hollow body of preferably barrel-shaped contour with an opening at one end thereof while a carrier body containing a charge of splinters, pellets, or the like or a gaseous charge, and which preferably has a barrel-shaped contour is detachably inserted into said hollow body through said opening, at least a portion of said hollow body including the portion defining said opening being of elastic material, preferably synthetic resin, and being divided into stave-like strips extending in the horizontal direction of said hollow body and being resiliently yieldable to permit the insertion of said carrier body into and its withdrawal from said hollow body through said opening.

The present invention relates to a hand grenade which for a different kind of use, for instance for attack and defense, is provided with a removable or exchangeable splinter carrier.

Military explosive bodies, especially hand grenades, are known which are equipped with a splinter spiral or fragmentation coiled casing which is adapted to be placed upon the cylindrical explosive charge. For purposes of attack and for avoiding danger to the life of the soldier throwing the grenade, said splinter spiral can be stripped of the explosive body. Grenades of this type are disclosed, for instance, in Swiss Patent 347,455 and U.S. Patent 3,164,091.

Explosive bodies of this type have the well known drawback that they contain a small number of splinters and require a high explosive charge for producing splinters, in other words, explosive bodies of this type have an insufficient splinter penetration.

It is, therefore, an object of the present invention to provide a hand grenade which will overcome the above mentioned drawbacks and will, for purpose of defense, have a splinter carrier with a considerable number of splinter elements of high splinter penetration.

It is another object of this invention to provide a hand grenade as set forth in the preceding paragraph, which can easily be converted by a simple operation into a weapon of attack and, more specifically, by removing or exchanging the splinter carrier without affecting the handling of the hand grenade.

These and other objects and advantages of the invention will appear more clearly from the following specification in connection with the accompanying drawings in which:

FIG. 1 is a side view of a hand grenade according to the present invention.

FIG. 2 is a partial section through the hand grenade of FIG. 1.

A hand grenade for attack and defense with a removable or exchangeable splinter carrier according to the present invention is characterized in that the hand grenade body which is equipped with a fuse comprises a mantle which serves as envelope for the barrel-shaped splinter

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carrier adapted from below to be inserted into the hand grenade body, said mantle which consists of elastic material, especially synthetic resin, has its lower tapering portion provided with longitudinal slots distributed over the entire circumference which divide the mantle into stave-like elastic tongues which can be resiliently spread apart for introducing and withdrawing the splinter carrier.

On one hand, for a convenient handling of the splinter carrier and on the other hand as bottom closing element, the splinter carrier may at its lower end be provided with a handle the outer upwardly extending edge of which forms with the splinter carrier an annular groove which during the insertion of the splinter carrier into the hand grenade body grasps the tongues and arrests the same. Thus, the handle simultaneously serves as bottom for the hand grenade body open at the bottom and also serves as connection for the tongues. For purposes of connecting the splinter carrier in the hand grenade body, it is possible within the mantle to provide a cylindrical pipe section into which also the explosive charge of the hand grenade can be screwed.

This hand grenade not only makes it possible to adapt the same to the respective requirements by the use of different kinds of splinter carriers and explosive charges of various strength, but even with removed splinter carrier represents a body which can conveniently be thrown.

Referring now to the drawings, the hand grenade body 1 shown therein comprises a mantle 2 of elastic material, especially synthetic resin. The lower tapering portion of said mantle 2 is by means of longitudinal slots 3 divided into stave-like tongues 4, the lower ends of which extend into a bottom member 5 in which they are firmly held.

As will be evident from FIG. 2, the end face of the inner chamber of said hand grenade body 1 is provided with a threaded pipe section 6 the outer surface of which is provided for instance with a left-hand steep thread 7 for connecting thereto a splinter carrier 8. The inside of said pipe section 6 is provided with a customary right-hand thread 9 for connecting thereto an explosive charge cylinder 10. The cylinder 10 forming the explosive charge which may consist of a material known under the trade name Holtex extends by means of a central bore 11 over a fuse 12 of any standard type. The two threads 7 and 9 may also in a manner known per se be designed as plug or bayonet joint thread.

The splinter carrier 8 the outer contour of which is barrel-shaped has its interior provided with a cylindrical cavity 13 corresponding in dimensions to the dimensions of the explosive charge cylinder 10. The splinter carrier 8 consists of a synthetic resin or another carrier frame of metallic salts or the like into which are embedded splinter elements 14, for instance, in the form of steel pellets or cut-up barbed wire. Adjacent its lower end, the splinter carrier 8 is provided with a turned out annular portion 15 into which snaps a protruding ring 16 forming a part of the bottom member 5 and serving for manipulating the grenade. Webs 15' (illustrated in FIG. 2) or the like in said turned out portion 15 or in the ring 16 prevent the bottom 5 from turning relative to the splinter carrier 8. An upwardly extending portion 17 of the bottom member 5 together with the splinter carrier 8 forms an annular groove 18 for the insertion of the lower ends of the tongues 4.

When the hand grenade which when handed out is, as a rule, equipped with the defense splinter body 8, is needed for attack, the splinter carrier 8 can easily and quickly be removed in view of the left-hand steep thread 7 or the bayonet joint thread. When withdrawing the splinter carrier 8, the tongues 4 are resiliently spread apart to such an extent that the splinter carrier 8 can slide out underneath said tongues. In view of the elasticity of the

synthetic material of which the hand grenade body 1 or its mantle 2 has been made, the tongues 4 will after removal of the splinter carrier 8 again spring back into their original position and in this way after removal of the splinter carrier 8 will give the grenade again a surface which can be grasped for throwing the grenade. When inserting the previously removed splinter body 8 or inserting another splinter body or an additional explosive charge or a smoke charge, which preferably has the same shape as the splinter carrier 8, the operation takes a reverse course. After the insertion of the barrel-shaped body 8, the tongues 4 resiliently engage the surface of the splinter carrier 8. The ends of said tongues extend into the annular groove 18 and are made non-displaceable by screwing the splinter carrier 8 onto the threaded pipe section 6.

The material known under the trade name "Holtex" consists primarily of an explosive of the nitrocellulose base with adding of pure nitropenta (pentaerythrit tetranitrat) or pure hexogen which is chippable and hardenable, and is marketed by the Nitrochemie Gesellschaft mit beschränkter Haftung, Aschau, Germany.

What I claim is:

1. A hand grenade for defense and attack, which includes: a hand grenade body equipped with a fuse and comprising a hollow body with an opening at one end thereof, a charge-containing splinter carrier body detachably insertable into said hollow body through said opening, at least a portion of said hollow body including the portion containing said opening being of elastic material and being divided into stave-like strips distributed over the circumference of said hollow body and extending in the longitudinal direction thereof and defining said opening, said stave-like strips being resiliently yieldable to permit selective widening of said opening for insertion of said charge-containing splinter carrier body into and its withdrawal from said hollow body, and a closure member for closing said opening, said closure member being provided with an outer peripheral flange flaring in a direction toward said hand grenade body and operable in assembled condition of said hand grenade with inserted

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carrier body to engage the adjacent ends of said carrier body and to hold the same in position.

2. A hand grenade according to claim 1, in which that portion of said hand grenade body which is adjacent said hollow body has associated therewith a threaded pipe section for threadedly receiving said charge-containing splinter carrier body thereon.

3. A hand grenade according to claim 2, which includes an explosive charge with a threaded section concentrically inside said splinter carrier body, and in which said threaded pipe section comprises an outer thread portion threadedly receiving said splinter carrier body in one direction of turning movement and also has an inner thread portion engaging only said threaded section of said explosive charge in direction of turning movement opposite to that of said splinter carrier body onto said outer thread portion.

4. A hand grenade according to claim 1, in which said carrier body at the free end portions of said stave-like strips is provided with an undercut annular recess, and in which said closure member is of elastically deformable resilient material adapted resiliently to spring in and engage said recess in assembled condition of said grenade.

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BENJAMIN A. BORCHELT, Primary Examiner.

JAMES FOX, Assistant Examiner.

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